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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/624,660	07/25/2000	Moshe Rock	10638-037001/952/33	6658

26161 7590 09/09/2005

FISH & RICHARDSON PC
P.O. BOX 1022
MINNEAPOLIS, MN 55440-1022

EXAMINER

TORRES VELAZQUEZ, NORCA LIZ

ART UNIT	PAPER NUMBER
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1771

DATE MAILED: 09/09/2005

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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

MAILED

SEP 08 2005

GROUP 1700

Application Number: 09/624,660
Filing Date: July 25, 2000
Appellant(s): ROCK ET AL.

Catherine M. McCarty
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed January 26, 2005.

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(1) *Real Party in Interest*

A statement identifying the real party in interest is contained in the brief.

(2) *Related Appeals and Interferences*

A statement identifying the related appeals and interferences, which will directly affect or be directly affected by or have a bearing on the decision in the pending appeal is contained in the brief.

(3) *Status of Claims*

The statement of the status of the claims contained in the brief is not correct. Since claims 19-32 have been cancelled, claims 1-8 and 10-18 are the only claims pending.

(4) *Status of Amendments*

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) *Summary of the Claimed Subject Matter*

The summary of invention contained in the brief is correct.

(6) *Grounds of Rejection to be Reviewed on Appeal*

The appellant's statement of the issues in the brief is not correct.

Claims 1-8 and 10-18 stand rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Lumb in view of Fujiwara and Toshio.

(7) *Claims Appealed*

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) *Prior Art of Record*

JP 09-087901 A	FUJIWARA	3-1997
HEI 2-182968	TOSHIO	7-1990

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5,312,667

LUMB

5-1994

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claims 1-8 and 10-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over LUMB et al. (US 5312667) in view of FUJIWARA (Abstract Japanese Patent 09-087901A) and TOSHIO et al. (JP 02-182968)

LUMB et al. discloses a composite textile fabric for moving moisture away from the skin. It includes a first fabric layer (inner layer) comprising either a polyester or nylon material which has been rendered hydrophilic and a second fabric layer comprising at least 25% by weight of a moisture absorbent material such as cotton. The first fabric layer and the second fabric layer (outer layer) are formed concurrently by knitting a plaited construction. (Abstract) The reference also teaches the use of other moisture absorbent materials such as synthetics (such as Hydrofil, manufactured by Allied Signal, Inc.) (Refer to Col. 3, lines 10-13) The reference further teaches that the surface of the material in the first fabric layer is raised. (Column 1, line 40). LUMB et al. also teaches that the composite textile fabric is used in garments, including sweatshirts, sweat pants, underwear, bathrobes, and various types of exercise clothing. (Column 1, lines 50-53)

The composite fabric may be constructed as a warp or weft knit, such as a two-end fleece, three-end fleece, terry with regular plaiting, double terry, double needle raschel and tricot. (Column 2, lines 67-68 through Column 3, lines 1-2) The reference teaches the use of spun yarns. (Col. 3, line 9; and Examples)

LUMB et al. further teach that the surface of the first fabric layer is raised by napping. The polyester or nylon layer is either round or modified cross-section, 0.3 to 6.0 denier. (Column 3, lines 30-35). The reference discloses that the significance of the plaited fabric construction is that

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this feature helps to create a substantial moisture concentration gradient between the surface of the raised polyester or nylon layer (which quickly transports water from the skin) and the cotton layer (which absorbs the water from the first layer and from which the water is evaporated. (Column 1, lines 62-68)

However, the reference fails to teach the use of particles of a refractory compound embedded within the yarn fibers of the inner fabric layer.

FUJIWARA et al. discloses a stocking constituted by a synthetic fiber containing a substance having a heat storing and heat insulating effects by absorbing the visible ray of the sunlight and generating heat through an energy conversion, having the improved heat insulating effect, and excellent in fashionable property. The reference further teaches that the stockings are constituted by a synthetic fiber such as nylon, polyester and an acrylic fiber containing a substance such as zirconium carbide. The reference also teaches the use of metal oxides, such as zirconium oxide. The reference also teaches that the fiber of their invention also has the effect of reflecting the far infrared rays generated from a human body, and it carries out thermal conversion and not only keeps it warm, but it can acquire a double heat insulation effect. The reference teaches that the solar energy-storing thermal fiber is prepared by mixing in synthetic fiber a substance that absorbs energy such as zirconium oxide (Refer to [0007-0008]).

TOSHIO et al. teaches a knit fabric having excellent heat-insulation and comfortableness by sufficiently opening the fiber tip parts of a pile fabric and uniformly and firmly attaching a binder containing far infrared radiation inorganic particles. (Abstract) TOSHIO teaches the use of materials such as zirconium oxide. (Page 2 of translation) The reference also teaches wearing the hair tips with the inorganic particles of the pile yarns placing the hair tip toward the side opposite to the human body, the human body is effectively kept warm. Also, since moisture such as sweat

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being dispersed from the human body surface permeates into the hydrophobic binder part and is absorbed in the moisture-absorbing fiber part of the deep pile part, the part in contact with the skin has a very good sense of refreshing. (Pages 13-14 of translation and Exhibit 1 herein)

Since the references are directed to insulating fabrics, the purpose disclosed by FUJIWARA et al. and TOSHIO would have been recognized in the pertinent art of LUMB et al.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the composite textile fabric and provide it with fibers with particles of zirconium carbide with the motivation of providing the fabric with improved heat insulation effect as disclosed by FUJIWARA et al. (Abstract); and further to wear the refractory particles away from the human body to keep the human body warm while dispersing moisture from the body and providing the skin with a very good sense of refreshing as disclosed by TOSHIO (Pages 13-14 of translation).

(10) *Response to Argument*

Appellants argue that the fabric in Fujiwara is a very thin stocking fabric where the entire fabric body is in close proximity to the skin. Appellants have obtained a certified translation of TOSHIO (Exhibit A of Appeal Brief), and found that the same passage in the certified translation reads very different to that referred by the Examiner in the TOSHIO translation provided bridging pages 13 and 14. In Applicant's provided certified translation, the tips of the pile yarn are explicitly described as being in contact with the wearer's body. Appellants conclude that because both FUJIWARA and TOSHIO disclose refractory particles positioned in close proximity to a user's skin, nothing in the prior art of record would have led the artisan to modify LUMB to provide a product having refractory particles positioned for reduced contact with a user's skin.

It is noted that while FUJIWARA is a very thin stocking fabric where the entire fabric body is in close proximity to the skin, the Examiner relies on the reference to provide the teaching of using such refractory particles for insulation purposes and further to incorporate the particles into the fiber by mixing these in the synthetic fiber. The primary reference to LUMB et al. provides the present structure that includes the increased surface area in the inner fabric layer produced by a raising process and the Examiner is incorporating the refractory particles into such layer with the purpose of further enhancing the insulation properties of the fibers/yarns of LUMB et al.'s fabric. The Examiner has re-verified the TOSHIO reference by obtaining a second translation (attached herein as an Appendix), with a partial translation of the passage argued by Appellants with regards to the location of the refractory particles in relation to the skin of the wearer and it is reproduced below:

In particular, when a knitted fabric, wherein a moisture absorbing fiber such as cotton and wool is used for pile yarn and wherein a binder with far infrared radioactive inorganic particles contained in the hair tips of the pile yarn is added, is put on so that the hair tips are directed toward the opposite side of the body, a heat insulating effect is particularly demonstrated on the body. The blood vessel is expanded as far infrared rays transmit deep inside the skin to improve the blood circulation. Thereby, the whole body gets warm in addition to parts of the body. The moisture content diverged from the body surface, such as a sweat, is absorbed into the moisture absorbing fiber part of the deep location of the pile via a water repellent binder. Thereby, a smooth touch is obtained on the portion brought into contact with the skin to result in extremely comfortable clothes. (Exhibit 1)

Contrary to Applicants assertion, TOSHIO does teach wearing the hair tips with the inorganic particles of the pile yarns placing the hair tip toward the side opposite to the human body such that the human body is effectively kept warm. Therefore, the present rejection incorporates the teachings of FUJIWARA to provide for the construction of energy-storing fibers and TOSHIO's to provide motivation for using such material away from the wearer's skin. It is further noted, that the claims do not preclude the inclusion of

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such refractory in the yarns of the outer layer of the present invention. The claims do not limit the inclusion of the refractory particles to only the inner layer of the composite. It is the Examiner's conclusion that for the reasons stated above, it would have been obvious to modify LUMB to provide a product having refractory particles positioned for reduced contact with a user's skin.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,




Norca L. Torres-Velazquez
Primary Examiner
Art Unit 1771

nlt

August 23, 2005

Conferees

Terrel Morris 

Carol Chaney 

FISH & RICHARDSON PC
P.O. BOX 1022
MINNEAPOLIS, MN 55440-1022



CAROL CHANEY
SUPERVISORY PATENT EXAMINER

Partial translation of No. 02-182968:

In particular, when a knitted fabric, wherein a moisture absorbing fiber such as cotton and wool is used for pile yarn and wherein a binder with far infrared radioactive inorganic particles contained in the hair tips of the pile yarn is added, is put on so that the hair tips are directed toward the opposite side of the body, a heat insulating effect is particularly demonstrated on the body. The blood vessel is expanded as far infrared rays transmit deep inside the skin to improve the blood circulation. Thereby, the whole body gets warm in addition to parts of the body. The moisture content diverged from the body surface, such as a sweat, is absorbed into the moisture absorbing fiber part of the deep location of the pile via a water repellent binder. Thereby, a smooth touch is obtained on the portion brought into contact with the skin to result in extremely comfortable clothes.

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8/23/05
Chisato Morohashi